PRESENTATION - ENERGY POLICY ADVISORY BOARD

December 18, 2001

Background

- Executive Order 2001-771: PSC to study generation and transmission issues.
- Administrative Case 387: To hear from utilities and others. Three public hearings.
- Electric Restructuring: Not here, but others can impact us and have restructured.

Industry Changes

- The Federal Energy Policy Act of 1992 : promoted independent power producers
- Federal Energy Regulatory Commission (FERC) Order 888: open access transmission
- Retail restructuring in nearby states: wholesale power being sold at market prices
- FERC Order 2000: creation of Regional Transmission Organizations (RTOs)
- Stricter environmental regulations: increased reliance on gas-fired generation

- All these have impacted the structure of the electric industry and how it operates.

1) Increased volume of large power transfers across greater distances
2) Reductions in reserve margins used by utilities for planning purposes
3) More reliance on wholesale power purchases; more volatility in wholesale prices
4) More reliance on gas-fired generation; increased volatility in natural gas prices

Electric Rates

- Our rates - among the lowest. 12% below region and 23% below nation in 2000
- Low rates - largely due to relying on coal-fired generation sold at cost-based rates
- We want to maintain Kentucky's rate advantage even though restructuring in nearby states, such as Ohio, is already impacting regional wholesale power markets

Kentucky's Electric Utilities

- Major utilities: Big Rivers, East Ky., LG&E, KU, AEP-KY, and ULH&P
- PSC regulates 21 distribution utilities; We don't regulate munis, TVA or TVA coops

Summary – Conclusions and Findings

Generation:

- Can adequately serve native load in the near-term. Four utilities, Big Rivers, East Ky. LG&E and KU, are adequately planning for the future. We have concerns about two other utilities, AEP-KY and ULH&P, in the long-term.

- Supply Resource Issues

  1) Reserve margins, reliance on peaking generation and purchased power are appropriate, but industry changes necessitate re-evaluation. We're requiring annual capacity needs assessments be filed starting in March 2002.

  2) Utilities to investigate shared ownership; coordinating plant maintenance schedules; to consider cost-effective demand side management. Merchant plant power may have a role if the price doesn't exceed that of utility-generated power.

  3) We suggest the Board review the creation of a public power authority to market the state's coal-fired generation. Non-utility siting and a policy favoring native load in curtailment matters are issues that should be addressed by statute.

Transmission:

- The electric grid in Kentucky is capable of accommodating its native load customers.
- The electric grid in Kentucky is not capable of accommodating all of the wholesale bulk transfers anticipated during periods of high transmission demand.
- The electric grid's reliability in Kentucky and the native load it serves is protected by Transmission Loading Relief (TLR) and other procedures.
- Parallel flows, power flows that are not planned nor compensated, reduce the reliability of the transmission systems.

- RTOs are expected to better manage parallel flows and more efficiently implement TLRs, because they will have a broader perspective than individual utilities.
- In order to accommodate the anticipated wholesale transfers, the electric grid would have to be upgraded.
- Any upgrades to the transmission system should be borne by those causing or benefiting from the upgrades.
- Kentucky's electric consumers have not caused the need to upgrade the existing transmission system and will not receive benefit from the upgrades.
- Kentucky's electric rates are now protected from transmission upgrade costs by current federal regulation that requires merchant plants to pay for transmission upgrades needed to carry their power over the lines they intend to use.

  (Unless merchant plants obtain firm transmission rights, they will have access to transmission on an as-available basis.
  To obtain firm transmission they must pay for any necessary upgrades to transmission facilities to accommodate the power transfer)

- We must work to ensure that the protections of reliability and costs remain.

  (This will involve remaining engaged in: RTO development, FERC procedures, Federal legislation, and proposing state legislation as necessary.)

- Legislation should be enacted in the Commonwealth to articulate a policy to ensure that if a jurisdictional utility's transmission system cannot reliably continue to provide service to all customers, service to native load customers can be curtailed only after service to all other customers has been curtailed.

  (This will provide state protection similar to the TLR procedure mentioned above.)

- In summary, the transmission system in Kentucky is adequate to serve the native load. The Commission and the Commonwealth must remain vigilant to

ensure that increased wholesale electricity transfers do not endanger the reliability or low cost of electricity in Kentucky.

Electric Transmission Flow Analysis Model

- The PSC staff directed an electric flow analysis model to determine the impact of proposed generating facilities on the reliability of Kentucky's transmission system. The model was created by transmission engineers of Kentucky's electric utilities and TVA. It was verified and augmented by an independent consultant (Commonwealt Associates Inc. of Michigan).
- The model indicated that under peak usage conditions that, with minor improvements, the existing system could accommodate approximately 6,000 to 7,800 MW of the currently proposed generation.
- These figures give only an indication of the transmission system to accommodate additional generating facilities, not a guarantee that the proposed generators could ship this quantity of power at all times. The electric system is very interdependent and to create this model several assumptions had to be made such as:
  - All proposed generation was shipped south under a summer peak condition,
  - All the generators were built as proposed,
  - The locations of the generators were as proposed,
  - Only thermal overloads were considered.
- Changes to any of the above or the addition of power transfers through the state could change the figures I mentioned.
- I must emphasize that:

- Unless merchant plants obtain firm transmission rights, they will have access to transmission only on an as-available basis, and
- To obtain firm transmission they must pay for any necessary upgrades to transmission facilities to accommodate the power transfer.

Demand and Supply Planning

- Big Rivers: Purchases 100% of its power needs at fixed prices. It will adequately be able to meet its needs for the foreseeable future.
- East Kentucky: Plans on meeting its needs by adding base load and peaking capacity plus relying on power purchased at fixed prices through 2010.
- LG&E/KU: Plan on meeting their system needs with new peaking capacity and DSM programs through 2010.
- AEP-KY: Plans on relying on market power purchases after 2004 for part of its load after an existing fixed price contract expires.
- ULH&P: Has a full-requirements, fixed price purchase power contract through 2006. Has no announced plans for meeting its system needs after that.

Supply Resource Issues

- Gas-Fired Generation / Natural Gas Prices: Relied upon more than in the past; still a small part of generation that appears reasonable even with recent price volatility.
- Joint Ownership / Scheduled Maintenance: The utilities will conduct joint studies on these issues and report to the Commission by the middle of 2002.
- Demand-Side Management: Should be a part of all utility resource planning.
- Impacts of Merchant Power Plants: Benefits not enough to require that native load customers pay for transmission upgrades to accommodate new generation. If power is priced right, merchant plants may play a role in generation planning.

Related Issues

- Public Power Authority: An issue raised by Gallatin Steel. It might warrant review, but is beyond the scope of PSC's jurisdiction. Suggest the Board look into it.
- Generation and Transmission Siting: Independent power producers fall under no existing siting authority. Legislation is needed to address this issue.

- Curtailment Issues – Large-scale markets may increase risk of system failures. Public policy, by statute, giving native load priority in curtailment matters is needed.

Orders to Utilities

- File capacity needs assessments annually, beginning March of 2002
- Conduct joint investigation of shared ownership and report by June 2002
- Conduct study of coordinating maintenance schedules and report by June 2002
- Conduct reserve margin analysis and include in next Integrated Resource Plan
- Thoroughly evaluate demand-side management in next Integrated Resource Plan